

STUDIES IN AUSTRALIAN ENTOMOLOGY.

No. XIV. NEW SPECIES OF GEODEPHAGOUS COLEOPTERA FROM
TROPICAL AUSTRALIA.CICINDELIDÆ (3), and CARABIDÆ (5) [PLATYSMATINI, MORIONI,
PERIGONINI, MASOREINI, AND PHYSCROTAPHINI].

BY THOMAS G. SLOANE.

CICINDELIDÆ.

CICINDELA FRENCHI, n.sp.

♀. Cupreous, elytra with wide lacteous margin; cupreous part of elytra strongly punctate; prothorax narrow, subcylindrical; elytra oval, bimucronate at apex of suture.

Upper surface of head, prothorax and internal part of elytra of a metallic copper-colour, elytra with a wide milky-white margin giving off an internal process about middle of length on each elytron; under surface metallic, cupreous, finely rugulose-punctate and clothed with white hairs on lateral parts, glabrous and of a coppery-green colour in middle, two apical segments of abdomen brownish; legs and four basal joints of antennæ metallic, coppery; tarsi and lower side of tibiæ green; labrum lacteous, with extreme edge infusate; mandibles lacteous, with apex black (base of dark apical part with cupreous reflections); labial palpi pallid, maxillary lurid, apical joint of all dark green; seven apical joints of antennæ lurid. Head wider than prothorax, 2.5 mm. across eyes. Prothorax a little broader than long (1.6 × 1.8 mm.), strongly rugose (the rugosity rough and intricate), impressed transversely anteriorly and posteriorly, and longitudinally in middle—the disc thus divided into two convex areas; anterior margin roundly produced in middle, not fringed with hairs; upper surface glabrous. Elytra oval (5.5 × 3.1 mm.), cupreous area strongly and closely punctate, —the punctures stronger on basal than on apical area—the white

parts minutely punctulate; sutural edge cupreous for whole length and ending in a sharp apical spur. Length 9, breadth 3.1 mm.

Hab.—Roebuck Bay, N.W.A. (Coll. French).

Allied to *C. rafflesia*, Chaud., but at once differentiated from that species by the larger size and more compact shape of the cupreous part of the elytra, which, too, is more strongly punctate, and (with the prothorax and head) of a copper, not greenish, colour; the prothorax is narrower and more convex; the inner ramification of the white margin is at half the length of the elytra, and is merely a deep bay or indentation (directed a little obliquely backwards) into the discoidal cupreous area, not with its inner part forming an elongate lunulate area as in *C. rafflesia*. The discoidal cupreous area is reduced almost to a millimetre in width in the neck connecting the basal and apical areas (where the two "bays" from the white lateral margins extend towards one another), the apical area is truncated posteriorly about a millimetre before the apex.

CICINDELA AURITA, n.sp.

Upper surface, including dark part of elytra, coarsely shagreened; prothorax subparallel and bordered on sides, lightly narrowed to apex, strongly produced backwards in an ear-like process on each side at posterior angles; elytra oval, widely rounded at apex, extreme edge of apex dark and minutely serrate under a lens. Upper surface of an olive-bronze colour, with a greenish tinge, especially on head; elytra with a broad cream-coloured margin extending on to the base on each side and forming a humeral lunula, a narrow whitish juxta-sutural vitta uniting with the white apical margin on each elytron, the raised sutural border of each elytron green to the apex; four basal joints of antennæ green; mandibles white with the teeth greenish-black; palpi white, infusate at apex; under surface metallic green; femora green, brownish near apex, coxæ and apex of abdomen testaceous.

♂. Head wider than prothorax (2.8 mm. across eyes), vertex not concave between eyes when viewed from behind. Labrum

with a setigerous puncture near each external angle, a transverse row of seven closely placed setigerous punctures in middle near anterior margin, the outer of these punctures distant from the lateral puncture; anterior margin lightly produced in the middle into a short wide prominence (external sides of this prominence opposite the outer puncture of the median row). Prothorax rimose, a little broader than long (2.1×2.3 mm.), lightly constricted by an arched impression in front, transversely impressed near base; sides lightly rounded, shortly and lightly narrowed to apex. Elytra oval (6.5×3.8 mm.), rough (granulate-punctate), the white humeral parts smooth, granulation finer on the white than on the green parts.

♀. A little wider than ♂; the triangular ear-like processes of the prothorax much stronger.

Length 10.5, breadth 3.8-4 mm.

Hab.—Q.: Mackay (Brown; Coll. Sloane). Mr. H. W. Brown found this species at Mackay, and has given me two specimens.

It differs from all other Australian species (unless *C. trivittata*, Macl., unknown to me in nature) by the form of the prothorax. It evidently differs decidedly from *C. trivittata* by colour (not reddish-coppery-bronze); elytra with sutural vitta only present on the apical half, and with no broad twice-interrupted central vitta.

DISTYPSIDERA ORBICOLLIS, n.sp.

Slender, elongate, cylindrical; head and prothorax roughly shagreened; prothorax with disc orbiculate; elytra punctulate, without undulate sculpture. Head and prothorax emerald green; labrum testaceous with narrow infuscate edge; elytra olive green, brighter towards apex, a large lurid or tawny humeral patch extending one-third the length on each elytron, posterior margin of this patch projecting in the middle in the form of a wide triangle, an infuscate basal space between the light-coloured humeral plagæ, this space very narrow posteriorly, but wide and subrotundate anteriorly.

Head narrower than in other species (1.7 mm. across eyes); eyes much closer together, especially in front. Prothorax granulate-

shagreened, hardly broader than long (1.2×1.3 mm.), constricted and cylindrical anteriorly and posteriorly; disc strongly and roundly tumid. Prosternal episterna roughly shagreened like the pronotum, dividing line between these parts (lateral border) indistinct. Elytra much wider than head (4×2.2 mm.); derm closely punctate, the puncturation becoming stronger from apex to base, much more coarse on light-coloured basal parts. Length 7, breadth 2.2 mm.

Hab.—Q.: Cairns District (Dodd). Sent to me by Mr. F. P. Dodd from Kuranda on the Cairns Railway.

This species is isolated by its small size, narrow head, globular thorax, densely punctate elytra, without undulate sculpture, and without any lightly coloured fascia across middle of disc.

CARABIDÆ.

Tribe PLATYSMATINI.

Group *Morionides*.

Lacordaire (1854) regarded the *Morionides* as a distinct tribe, as also did Horn (1881); but Chaudoir, when he monographed the *Morionides* in 1880, looked upon them as forming part of the great carabidous tribe *Platysmatini*.*

Genus *MORIO*.

Following Chaudoir the Australian species of *Morio* may be divided into two groups as under:—

- | | |
|--|-----------------------------------|
| i. Prothorax with sides bisetose. Mentum with lobes sinuate on anterior part of external side..... | 1. <i>M. longipennis</i> , Putz. |
| ii. Prothorax with sides plurisetose. Mentum with external side of lobes not sinuate.... | 2. <i>M. australis</i> , Casteln. |
| 3. <i>M. victoriae</i> , Casteln. | 6. <i>M. germanus</i> , Chaud. |
| 4. <i>M. longicollis</i> , Macl. | 7. <i>M. pachysomus</i> , Chaud. |
| 5. <i>M. novæ-hollandiæ</i> , Casteln. | 8. <i>M. crassipes</i> , n.sp. |

*“Les insectes dont nous allons nous occuper font . . . partie du grand groupe Féroniens.” Bull. Mosc. 1880, p. 317. This supports the opinion expressed by me (These Proceedings (2) ix. p. 409) when I did not know Chaudoir’s views on the taxonomical value and position of the *Morionides*.

The following notes indicate my views with regard to the species described from Australia.

1. MORIO LONGIPENNIS, Putzeys.

Ann. Mus. Civ. Genov. vii. p. 727 (1875); Chaudoir, Bull. Mosc. iv. p. 337 (1880).

Putzeys gives the size as $12-19 \times 3.3-5.5$, Chaudoir as $10-13 \times 3.3-5$; my specimens (4) measure $13.5-15 \times 4.1-4.4$ mm.

Hab.—New Guinea: Fly River, Andai, Sorong, Katau, Ramou—Arou Islands (Beccari and D'Albertis, *vide* Putzeys and Chaudoir)—Queensland: Somerset and Mount Ernest (*vide* Chaudoir), Cairns (H. W. Brown; Coll. Sloane).

2. MORIO AUSTRALIS, Castelnau.

Trans. Roy. Soc. Vict. viii. p. 122 (1868); Chaudoir, *l.c.*, p. 359.

Clypeus not furrowed; prothorax cordiform, sides decidedly rounded on anterior four-fifths, strongly narrowed and sinuate to base; elytra with basal border hardly dentate at humeral angles. Length $13-16 \times 3.9-5$ mm.

Hab.—N.S.W.: Lilyvale, 29 miles S. from Sydney (Taylor), Mittagong (Coates), Goulburn (Sloane).

3. MORIO VICTORIÆ, Castelnau, *l.c.*, p. 122.

Resembling *M. australis*, Casteln., but prothorax less sinuate on posterior part of sides, anterior angles less marked (widely rounded). Length 14.5×4.5 mm.

Hab.—Victoria (*vide* Castelnau)—N.S.W.: Mount Kosciusko (given to me by Mr. A. M. Lea).

I have compared my specimen with the type in the Howitt Collection, Melbourne.

4. MORIO LONGICOLLIS, Macleay.

Trans. Ent. Soc. N.S.W. ii. p. 95 (1871).

Differs from *M. australis*, Casteln., by clypeus with five longitudinal furrows, the middle one deep and straight, the ones on each side of it oblique; front less convex between the frontal

impressions; postocular part of orbits larger and more swollen; basal border of elytra more strongly dentate at humeral angles. Length 15-16.5 × 4.1-4.4 mm.

Hab.—N.S.W.: Richmond River (Froggatt)—Q.: Gayndah (Masters).

5. MORIO NOVÆ-HOLLANDIÆ, Castelnau, *l.c.*, p. 122.

M. australasie, Chaudoir, Rev. & Mag. Zool. 1869, p. 122; *M. seticollis*, Macleay, *l.c.*, p. 96.

Smaller and more convex than *M. longicollis*, Macl.; clypeus not furrowed; postocular parts of orbits smaller. Length 10.5-12 × 3.2-3.5 mm.

Hab.—Q.: Gayndah (Masters), Townsville and Cairns (Dodd).

Note 1.—The specimens from Townsville and Cairns are of more robust form, with the elytral striæ distinctly punctate. I regard them as in all probability representing *M. germanus*, Chaudoir (Bull. Mosc. Iv. p. 361, 1880), but do not feel convinced of their specific distinctness from the more southern form with simple striæ.

Note 2.—There remains a doubt in my mind as to the identity of *M. australasie*, Chaud. (of which I have not seen the description), with *M. novæ-hollandiæ*, Casteln., although this synonymy is given by Chaudoir in his Monograph. I am sure of my identification of Macleay's species, the types of which I have seen; and I feel no doubt, from Castelnau's description, but that *M. novæ-hollandiæ* = *M. seticollis*, Macl., but I cannot help thinking that *M. longicollis*, Macl.,—which I regard as distinct from *M. novæ-hollandiæ*—was included under that species by Chaudoir in his Monograph; his indicating that *M. novæ-hollandiæ* is a species with the clypeus furrowed, and the postocular parts of the orbits large (larger than in *M. australis* and *M. germanus*)—opinions I do not share,—makes this conclusion seem unavoidable. If so, *M. australasie* may = *M. longicollis*, but even if that be the case I hold to the opinion that the evidence available to me shows *M. seticollis*, Macl., to be synonymous with *M. novæ-hollandiæ*, Casteln.

7. MORIO PACHYSOMUS, Chaudoir.

Bull. Mosc. Iv. p. 358 (1880).

This species is unknown to me in nature; by the form of the prothorax, without sinuosity on the posterior parts of the sides, it seems differentiated from all our other species; 14.5×4.5 mm.

8. MORIO CRASSIPES, n.sp.

♂. Elongate, robust. Black. Clypeus deeply excised in middle, each side triangular, prominent and bearing a setigerous puncture; prothorax cordate, widely bordered, four or five setigerous punctures along each margin; elytra parallel on sides, dentate at humeral angles, strongly and simply striate, a very short (almost punctiform) striole at base of first interstice, ninth interstice closely punctate for whole length. Legs stout; intermediate tibiae curved, posterior tarsi greatly dilatate and sub-cylindrical.

Head large (4.6 mm. across eyes), generally as in *M. longicollis*, Macl., frontal impressions shallower, wider, spaces between them and eyes less convex; eyes very prominent and, with orbits, reniform; posterior part of orbits greatly developed, equalling eyes in size. Antennae with four basal joints glabrous. Prothorax cordate (4.7×5.6 mm.), truncate at base and apex; moderately convex; basal area depressed; sides lightly rounded on anterior four-fifths (subparallel at widest part), strongly sinuate posteriorly and meeting base at right angles; anterior angles widely rounded; basal angles rectangular, with a setigerous puncture; marginal channel wide; median line strongly impressed. Elytra wider than prothorax (13.8×6.8 mm.), convex; interstices convex, hardly narrower or more convex near apex, first without the usual antepical setigerous punctures, third unipunctate at posterior third. First ventral segment with a deep longitudinal channel in middle. Posterior femora much larger and narrower, and anterior tibiae more dilatate at apex than in other Australian species; intermediate tibiae curved, with a hairy brush on inner side near apex; posterior tibiae smooth, glabrous, longitudinally sulcate on pos-

terior side; tarsi (δ)—anterior differing from other Australian species by being less dilatate, naked beneath, basal joints rounded and not produced at inner apical angle; posterior very thick, second joint widest, third, fourth and fifth successively narrower, fifth as long as third and fourth together, wide at base, parallel on sides, its upper surface with a deep sulciform concavity on outer side at base.* Length 24, breadth 6.8 mm.

Hab.—Q, : Cairns District (Coll. Sloane).

This remarkable species was taken at Kuranda, near Cairns, by Mr. F. P. Dodd. Its position seems to be between *Hyperion* and *Morio*; it might have been regarded as the type of a new genus or subgenus and substantial reasons given for so treating it, but I prefer to look upon *Morio* as a genus which varies sufficiently to include *M. crassipes* as an aberrant form. Its size, incised clypeus, and the strange form of the legs, in combination differentiate it from all other Australian Morionides.

Tribe PERIGONINI.

Bates, *Biologia Centrali-Americana*, Col. i. p. 133.

Genus PERIGONA.

P. RUFILABRIS, Mael., var. *INFUSCATA*, n. var.

Closely resembling *P. rufilabris*, Mael.; head piceous, clypeus and labrum ferruginous, prothorax ferruginous, sometimes a little infusate, elytra subpiceous with margins ferruginous. Differs from *P. rufilabris* by head not such a deep black, elytra with the piceous colour extending much more generally over the elytra (the basal third not rufescent); prothorax (0.8×1.2 mm.) less convex, a little less narrowed to base, anterior angles more prominent, margin a little explanate at basal angle Length 3.3-3.8, breadth 1.4-1.65 mm.

Hab.—Q, : Cairns (Dodd; eight specimens : Coll. Sloane).

* 12:x.:04. Since this was written Mr. Dodd has sent the ♀, which shows the same characters of legs and tarsi as the ♂.—T.G.S.

This will probably come to be recognised as a distinct species, but, my knowledge of *P. rufilabris* being confined to two specimens, I prefer to place the Cairns species as a variety till more knowledge is gained of the amount of variation occurring in these nearly allied forms. The third interstice of the elytra has a fine puncture about the middle of its length, but I can find no trace of a puncture in front of this; in *P. rufilabris* there is a more strongly impressed puncture at half the length, and another still more distinct on the outside of the third stria about halfway between this median puncture and the base of the elytra.

Note.—*P. australica*, Sl. By an error *P. australica* appears in my tabulation of the Australian species of *Perigona** under the name of *P. apicalis*, a name which should be treated as non-existent.

Tribe MASOREINI.

Bates, Biologia Centrali-Americana, Col. i. p. 174

MASOREUS AUSTRALIS, n.sp.

Oval, subconvex, lævigatè; head with two supraorbital setæ on each side. Black; elytra sericeous-maculate; legs piceous; palpi and two basal joints of antennæ ferruginous, rest of antennæ infusate.

Head wide, short, smooth. Prothorax widely transverse (1.4 × 2.3 mm.), lightly convex; apex emarginate; anterior angles obtuse, distant from head; sides rounded; base wider than apex, obliquely truncate on each side, feebly lobate in middle, basal angles obtuse but marked; lateral basal impressions obsolete; median line finely impressed; two marginal setigerous punctures on each side—anterior a little before middle, posterior at basal angle. Elytra wide, oval (3.8 × 2.8 mm.), lightly convex, depressed near suture, lightly striate; humeral angles widely rounded; sides lightly rounded; apical curve widely rounded without lateral sinuosities; striæ fine, simple, three inner more strongly impressed than others, first outturned to join second at base,

* These Proceedings, 1893, p. 635.

eighth finely impressed, extending forward to humeral angle; border fine, extending from scutellum to sutural apex. Length 6·5, breadth 3·8 mm.

Hab.—Q. : Townsville (Dodd; Coll. Sloane).

Tribe PHYSOCROTAPHINI.

C A R P A U L U M,* n.g.

Mentum short; lobes short; sinus with wide short triangular pointed median tooth. *Palpi* long: *labial* with penultimate joint long, narrow, bearing several (4 or 5) setæ on apical half of front margin; apical joint as long as penultimate, of a long narrow lightly compressed triangular form, nitid, sparsely setose: *maxillary* with second joint long, bisetigerous in front near apex; second joint conical, shorter than apical, with three long setæ at apex; apical joint stout, almost as long as apical of labial palpi, (of somewhat similar shape to apical of labial, but stouter and less triangular), sparsely covered with short setæ. *Maxillæ* with inner lobe hooked at apex, rather sparsely spinulose on inner side. *Ligula* corneous, wide, free; 5-setose—three long setæ at apex, two similar setæ placed a little backward from the lateral ones of apex: *paraglossæ* membranous, free from ligula; apex very narrow and projecting far beyond ligula. *Labrum* truncate, 6-setose. *Mandibles* prominent. *Head* short, convex, constricted behind eyes to a short subcondyliform neck received to the eyes into the sinus of the prothorax; front with two short rounded impressions; two supraorbital setæ on each side; postocular prominences armed with a small setigerous tubercle near eye. *Antennæ* filiform, reaching backwards to basal third of elytra; all the joints setose, four basal joints cylindrical and sparsely setose; seven apical joints lightly compressed, pubescent; basal condyle exposed; first joint about twice the length of second; second shortest, two-thirds the length of third; third very little longer than fourth and succeeding joints. *Prothorax* depressed, deeply emarginate at apex, explanate on sides; derm punctulate; two lateral marginal setæ on

* *Carpaulum*, a word used by the aborigines at Cairns, Queensland, to denote an insect—on the authority of Mr. Horace W. Brown.

each side, anterior just behind widest part, posterior at basal angles. *Elytra* truncate at apex (with a narrow coriaceous margin), striate; interstices shagreened and thickly setigero-punctate; an abbreviate striole at base of first interstice. *Under surface* finely setigero-punctate; first segment of abdomen with a longitudinal concavity in middle in ♂. *Legs* slender: anterior femora hairy on anterior side towards base; anterior tibiæ with upper side lightly arcuate and longitudinally grooved; tarsi setose on upper surface, posterior elongate, first joint about as long as three succeeding joints together, anterior tarsi in ♂ subdilatate with a narrow double row of papillæ in middle of three basal joints; ungues simple. *Form* depressed. Alate.

Baron de Chaudoir formed a special group, Physocrotaphides, to include the genera *Helluodes*, *Physocrotaphus* and *Pogonoglossus* (which Dr. Horn indicated as a tribe*); none of these genera is known to me in nature, but *Carpaulum* evidently differs from *Helluodes* by its small size and head not much wider than thorax; and from *Pogonoglossus* by its long slender antennæ. It is apparently much more closely allied to *Physocrotaphus*, but, apart from my disinclination to bring a genus of Ceylon into our fauna without knowledge of it in nature, there seem tangible differences in the form of the tooth of the mentum—not “*profunde bifido*,”—and the ligula—not “*late truncata*,”—as stated by Chaudoir; the colour too is not *brilliant black* as stated by Lacordaire.

CARPAULUM INFLATICEPS, n.sp.

Brown; elytra darker than head and prothorax; under surface, legs, &c., ferruginous-brown.

Head convex, wide (2.5 mm. across eyes), sparsely setigero-punctate; eyes prominent; orbits greatly developed behind eyes, almost equalling eyes in size and prominence. Prothorax subcordate, transverse (1.8 × 2.8, length 2.2 mm. at sides), a little wider at apex (2.25 mm.) than at base (2.1 mm.), rather closely and finely punctate (each puncture with a decumbent seta); sinus to receive neck truncate at bottom, widely oblique on sides;

* Trans. Am. Ent. Soc. ix. 1881, p. 141.

explanate lateral margins widely triangular and pointed at anterior angles, wide and reflexed posteriorly; sides rounded on anterior half, sinuate posteriorly and meeting base at right angles; base truncate, sloping lightly forward from peduncle on each side; basal angles obtuse, but marked. Elytra depressed, much wider than prothorax (6.2×3.7 mm.), parallel on sides; shoulders widely rounded; striæ strongly impressed; interstices equal, hardly at all convex, closely covered with setigerous punctures, 9th very narrow, depressed (convex just behind shoulder), seriate-punctate. Length 11.5, breadth 3.7 mm.

Hab.—Q.: Cairns District (Coll. Sloane). Sent by Mr. F. P. Dodd from Kuranda.

CARPAULUM POROSUM, n.sp.

Upper surface brown-piceous; mouth-parts, legs and under surface light brown; lower side of head, episterna of prosternum, mesosternum and metasternum piceous.

Head convex (2.2 mm. across eyes); frontal impressions strongly impressed, rotundate; eyes prominent, deeply enclosed at base, posterior parts of orbits much smaller and less prominent than eyes; postocular tubercle small, sharp. Prothorax subcordate, transverse (1.7×2.6 , length 2 mm. at sides), closely set with fine setigerous punctures; sinus to receive head truncate at bottom, sides short, rounded; anterior angles widely rounded; disc lightly convex, finely canaliculate; sides and base similar to those of *C. inflaticeps*, Sl., but margins less widely explanate. Elytra (5.7×3.6 mm.) as in *C. inflaticeps*, the juxta-humeral convexity of the 9th interstice less marked. Length 11, breadth 3.6 mm.

Hab.—Q.: Kuranda (Dodd; Coll. Sloane).

Differs from *C. inflaticeps*, Sl., by head smaller, less punctate, eyes less prominent, postocular part of orbits much smaller and less swollen; prothorax wider at base (2.1 mm.) than at anterior angles (1.7 mm.), sides less strongly sinuate posteriorly, disc less closely punctate, lateral margins less explanate especially towards anterior angles, these less prominent, widely rounded (not pointed), sinus to receive head shallower with sides rounded (not long and oblique).